

What is claimed is:

1. A dipole antenna, comprising:
  - a substrate, made of a dielectric material, wherein said substrate has a first surface and a second surface which is essentially parallel to said first surface;
  - 5 a first radiator, formed on said first surface;
  - a second radiator, formed on a portion of said second surface, wherein said portion of said second surface is not overlapped with an area of said second surface on which said first radiator is projected;
  - 10 a first feeding point, installed on one end of said first radiator near said second radiator; and
  - a second feeding point, installed on the area of said first surface adjacent to said first feeding point, wherein said second feeding point is electrically connected to said second radiator.
- 15 2. The dipole antenna of claim 1, wherein said substrate is a printed circuit board.
3. The dipole antenna of claim 2, wherein said first radiator and said second radiator are printed on said printed circuit board.
- 20 4. The dipole antenna of claim 1, wherein said first radiator is essentially identical to said second radiator in geometrical shape.
5. The dipole antenna of claim 1, wherein said first radiator and said second radiator are essentially rectangular.

6. The dipole antenna of claim 1, wherein said first radiator and said second radiator are skew-symmetrical to each other on said substrate.

5           7. The dipole antenna of claim 1, wherein said substrate comprises:  
at least one first metallic layer, which is corresponding to said first radiator in layout; and  
at least one second metallic layer, which is corresponding to the second radiator in layout, and said second metallic layer is electrically connected to said second  
10          radiator.

8. The dipole antenna of claim 7, wherein said first metallic layer and said second metallic layer are multi-layered structures respectively.

15           9. The dipole antenna of claim 7, wherein said second feeding point, said second metallic layer and said second radiator are electrically connected by means of a via.

10. The dipole antenna of claim 7, wherein said substrate is a multi-layered printed circuit board.

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25           11. A dipole antenna, comprising:  
a substrate, made of a dielectric material, wherein said substrate has a first surface and a second surface which is essentially parallel to said first surface, said substrate comprising:  
at least one first metallic layer, which is corresponding to said first

radiator in layout; and

at least one second metallic layer, which is corresponding to the second radiator in layout, and said second metallic layer is electrically connected to said second radiator;

5 a first radiator, formed on said first surface;

a second radiator, formed on a portion of said second surface, wherein said portion of said second surface is not overlapped with an area of said second surface on which said first radiator is projected;

10 a first feeding point, installed on one end of said first radiator near said second radiator; and

a second feeding point, installed on an area of said first surface adjacent to said first feeding point, wherein said second feeding point is electrically connected to said second radiator.

15 12. The dipole antenna of claim 11, wherein said substrate is a printed circuit board.

13. The dipole antenna of claim 12, wherein said first radiator and said second radiator are printed on said printed circuit board.

20 14. The dipole antenna of claim 11, wherein said first radiator is essentially identical to said second radiator in geometrical shape.

25 15. The dipole antenna of claim 11, wherein said first radiator and said second radiator are essentially rectangles.

16. The dipole antenna of claim 11, wherein said first radiator and said second radiator are skew-symmetrical to each other in said substrate.
- 5        17. The dipole antenna of claim 11, wherein said first metallic layer and said second metallic layer are multi-layered structures respectively.
- 10      18. The dipole antenna of claim 11, wherein said second feeding point, said second metallic layer and said second radiator are electrically connected by means of a via.
19. The dipole antenna of claim 11, wherein said substrate is a multi-layered printed circuit board.